AdvanTex® Treatment System Sampling Protocol

Prepared For

Maryland Department of the Environment
Wastewater Permits Program

Prepared By

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1.0 Maryland Department of the Environment (MDE) Sampling Requirements

1.1 Samples to be collected by a third party testing facility chosen and trained by the manufacturer.

1.2 Changes to the testing facility or sampling protocol should be reported to MDE within 30 days.

1.3 Samples collected are to be a representative 24-hour composite or equivalent. A unit manufacturer representative may be present to ensure a quality sample is taken, but may not take the sample.

1.4 The testing facility will be expected to utilize a chain of custody and will be expected to provide, if necessary, this information to MDE.

1.5 The sample collected must be analyzed for Total Nitrogen and its components of TKN, Nitrite, and Nitrate in the lab.

1.6 Samples must have a TN reduction of 50% or an effluent concentration of 20 mg/L calculated at the 75th percentile.

1.7 Onsite measurements of dissolved oxygen (DO), wastewater temperature, and pH should be taken.

1.8 All sampling methods and preservation techniques should be consistent with "Standard Methods for the Examination of Water and Wastewater," 20th Edition, 1998, A.P.H.A. or any EPA approved method.

2.0 MDE Monitoring and Reporting Requirements

2.1 MDE will require the first 12 units installed in Maryland by each manufacturer to be tested quarterly for one year for a total of 48 samples.

2.2 The resulting 24-hour composite samples, or equivalent, will be used for analysis of the performance of the system.

2.3 Sampling results and documentation shall be submitted by the unit manufacturer, or his representative, on a semi-annual basis, in electronic format to MDE. The sampling data shall be summarized and submitted as an Excel file. The actual a laboratory reports shall also be submitted, preferably electronically as a PDF file.

2.4 Local Approving Authorities may have additional monitoring requirements; therefore, manufacturers must contact them to ensure they are in compliance.

2.5 After the verification period is over, MDE will not require further sampling but will reserve the right to spot sample any unit installed.

2.6 MDE may revoke approval if sampling results generated during the verification period indicate that the system is not meeting required effluent characteristics.

2.7 MDE will consider all efforts to work with the manufacturer in situations where effluent standards are not being met. If further monitoring is required, it will be at the manufacturer's expense.

3.0 MDE Performance Requirements

3.1 The AdvanTex Treatment System (Fig. 1) must reduce Total Nitrogen (TN) by at least 50% or have an effluent concentration of 20 mg/L or less, both calculated at the 75th percentile.

4.0 Sampling Matrixes

4.1 The following sampling matrix (table 1) applies to all AdvanTex sites that are being analyzed according to the Maryland BAT program. The intended purpose of this matrix is to provide a schedule of when and what types of samples are to be taken from the first 12 systems installed under the Maryland BAT program. For each system installed, collect quarterly samples and analyze according to the schedule outlined in Table 1

Table 1: Sampling Schedule

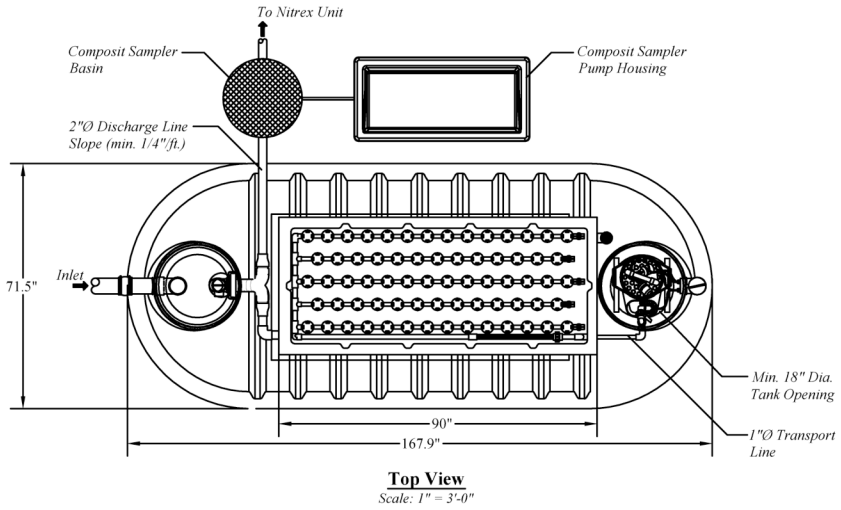
Sample: Time From Start-up	**TKN**	**NH_3**	**NO_2**	**NO_3**	**TN**	**pH[2]**	**Temp[2]**	**DO[2]**	**Turbidity[2]**
Week 12 (Q1)	X	X	X	X	X	X	X	X	X
Week 26 (Q2)	X	X	X	X	X	X	X	X	X
Week 39 (Q3)	X	X	X	X	X	X	X	X	X
Week 52 (Q4)	X	X	X	X	X	X	X	X	X

[1]*All samples referenced in this matrix are to be 24-hour composite samples.*
[2]*Temperature, Dissolved Oxygen and Turbidity are to be analyzed at the site.*

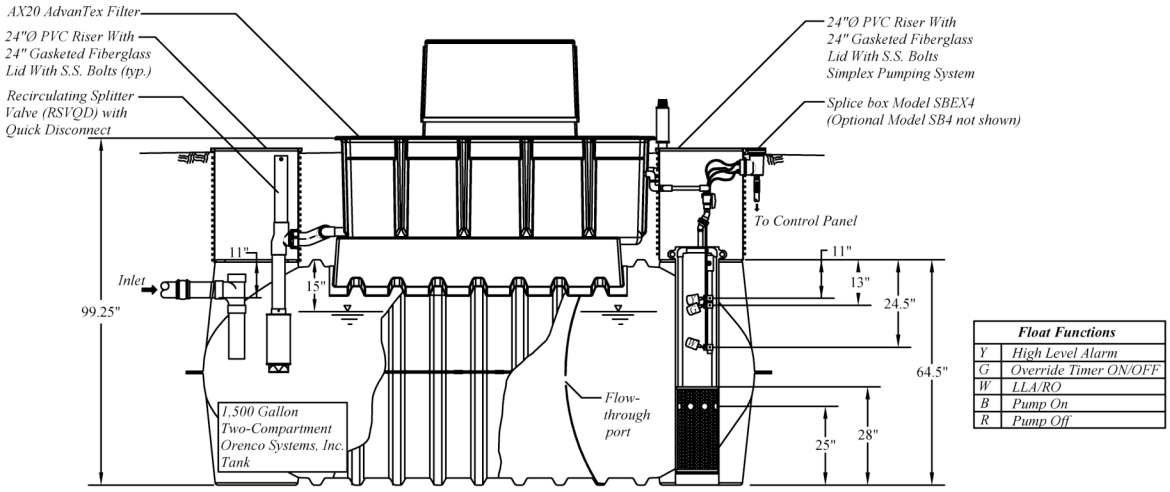
5.0 Sampling Procedures *(reference AdvanTex composite sampler drawing)*

5.1 Install composite sampler next to the sampling basin.
5.2 Remove sampling basin lid. (Fig.2)
5.3 Run sampling tube from composite sampler through conduit into the sampling basin. (Fig.2)
5.4 Ensure that the sampling tube terminal end is located no more than three inches below the invert of the outlet (liquid level).
5.5 Replace sampling basin lid making sure that the lid bolts are used to secure the lid. (Fig.2)
5.6 Operate composite sampler for 24 hours
5.7 Analyze for pH, Temperature, Dissolved Oxygen, and Turbidity onsite
5.8 Remove the sampling tube from the conduit and transport the sample to the lab for analysis.

Figure 1: AdvanTex® Treatment System

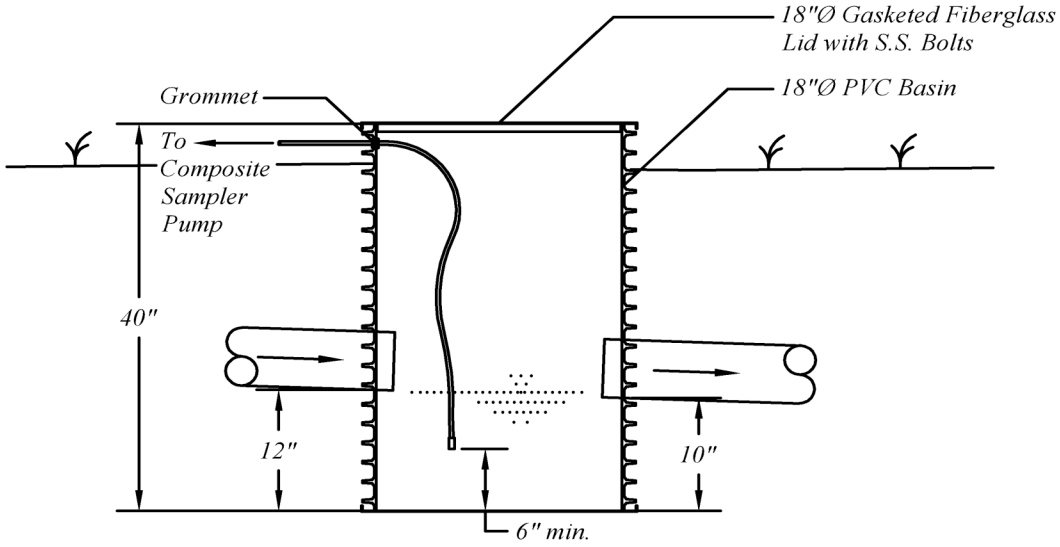


Top View
Scale: 1" = 3'-0"



Side View
Scale: 1" = 3'-0"

Figure 2: Sampling Basin



Composit Sampler Basin Detail

Scale: NTS